

Aflatoxin M1 in milk from urban and rural farmhouses of Punjab, Pakistan

ABSTRACT

Aflatoxin M1 (AFM1) was determined in 107 milk samples collected from urban and rural farmhouses from Punjab, Pakistan, by HPLC with fluorescence detection. An incidence rate of 64% (38/59) in milk samples from urban farmhouses was found, with a mean concentration of $0.064 \pm 0.023 \mu\text{g L}^{-1}$. In rural samples about 52% (25/48) of milk samples were contaminated with AFM1, with a mean of $0.04 \pm 0.034 \mu\text{g L}^{-1}$. About 42% of milk samples from urban and 27% from rural farmhouses were well above the limit permitted by the European Union (EU). However, only 15% and 8% of milk samples from urban and rural farmhouses, respectively, exceeded the limit of USDA/Codex regulations. The results showed that the contamination of milk with AFM1 from Punjab, Pakistan, when compared with Codex limit is present and needs continuous monitoring. The awareness and education among dairy farmers on the potential health risks associated with aflatoxins should be communicated.

Keyword: Milk; AFM1; Urban and rural farmhouses; Punjab; Pakistan